

What is claimed is:

1. A data communication system comprising a first information processing apparatus for transmitting data over a network and a second information processing apparatus for receiving the data from said first information processing apparatus over said network, wherein:
 - 5 said first information processing apparatus measures an upstream transmission rate of an access link;
 - 10 said second information processing apparatus measures a downstream transmission rate of an access link; and
 - 15 one of said first information processing apparatus and said second information processing apparatus, which dynamically controls a transmission rate, receives the transmission rate measured by another information processing apparatus, determines a maximum value of the transmission rate based on the smaller of the two transmission rates, and determines the transmission rate within a range of the maximum value, and thereby
- 20 said first information processing apparatus transmits the data to the second information processing apparatus at the determined transmission rate.
2. An information processing apparatus transmitting data to another information processing apparatus, or receiving the data from said other information processing apparatus, over a network, comprising:
 - 25 acquisition means for acquiring a first information on a transmission rate from said other information processing apparatus;
 - 30 reference value setting means for setting a maximum reference value of a transmission rate based on the first information acquired from said other information processing apparatus and on a second information on a transmission rate of said own information processing apparatus; and
 - 35 transmission rate controlling means for controlling a transmitting or receiving transmission rate of the data to or from said other information processing apparatus within a range of the maximum

reference value set by said reference value setting means.

3. The information processing apparatus according to claim 2 wherein:

when the data is sent to said other information processing apparatus, said reference value setting means selects a smaller one of a maximum transmission rate of a downstream transmission line of said other information processing apparatus, which is acquired as the first information, and a maximum transmission rate of an upstream transmission line of said information processing apparatus and sets the maximum reference value based on the selected transmission rate.

4. The information processing apparatus according to claim 3 wherein:

said reference value setting means further selects a smaller one of a maximum bit rate of a reception capability of said other information processing apparatus, which is acquired as the first information, and a maximum bit rate of a transmission capability of said information processing apparatus and sets the maximum reference value based on the smaller of the selected bit rate or the selected transmission rate.

5. The information processing apparatus according to claim 2 wherein:

when the data is received from said other information processing apparatus, said reference value setting means sets the maximum reference value of the transmission rate based on a smaller one of a maximum transmission rate of an upstream transmission line of said other information processing apparatus, which is acquired as the first information, and a maximum transmission rate of a downstream transmission line of said information processing apparatus.

6. The information processing apparatus according to claim 5 wherein:

said reference value setting means further selects a smaller one of a maximum bit rate of a transmission capability of said other information

processing apparatus, which is acquired as the first information, and a maximum bit rate of a reception capability of said information processing apparatus and sets the maximum reference value based on a smaller one of the selected bit rate and the selected transmission rate.

5 7. The information processing apparatus according to claim 2, wherein:

 said reference value setting means further sets a minimum reference value of the transmission rate; and

10 said transmission rate control means controls the transmitting or receiving transmission rate of the data to or from said other information processing apparatus within a range between the maximum reference value and the minimum reference value set by said reference value setting means.

15 8. The information processing apparatus according to claim 2 wherein:

 when the transmission rate is decreased, said transmission rate control means changes a decreasing width in the transmission rate based on a proportion of the transmission rate to the maximum reference value.

20 9. The information processing apparatus according to claim 2, wherein:

 said transmission rate control means increases the transmission rate in such a way that time until the transmission rate reaches the maximum reference value becomes a given length of time.

25 10. An information processing method for use in an information processing apparatus for transmitting data to another information processing apparatus, or receiving the data from said other information processing apparatus, over a network, comprising:

 an acquisition step of acquiring first information on a transmission rate from said other information processing apparatus;

30 a reference value setting step of setting a maximum reference value of a transmission rate based on the first information acquired from

said other information processing apparatus and on second information on a transmission rate of said own information processing apparatus; and

5 a transmission rate controlling step of controlling a transmitting or receiving transmission rate of the data to or from said other information processing apparatus within a range of the maximum reference value set by processing of said reference value setting step.

10 11. A computer-readable recording medium recording therein a program that controls an information processing apparatus for transmitting data to another information processing apparatus, or receiving the data from said other information processing apparatus, over a network, said program comprising:

an acquisition step of acquiring first information on a transmission rate from said other information processing apparatus;

15 a reference value setting step of setting a maximum reference value of a transmission rate based on the first information acquired from said other information processing apparatus and on second information on a transmission rate of said own information processing apparatus; and

20 a transmission rate controlling step of controlling a transmitting or receiving transmission rate of the data to or from said other information processing apparatus within a range of the maximum reference value set by processing of said reference value setting step.

25 12. A program that controls an information processing apparatus for transmitting data to another information processing apparatus, or receiving the data from said other information processing apparatus, over a network, said program causing a computer to execute:

an acquisition step of acquiring first information on a transmission rate from said other information processing apparatus;

30 a reference value setting step of setting a maximum reference value of a transmission rate based on the first information acquired from said other information processing apparatus and on second information on a transmission rate of said own information processing apparatus; and

a transmission rate controlling step of controlling a transmitting or receiving transmission rate of the data to or from said other information processing apparatus within a range of the maximum reference value set by processing of said reference value setting step.